

**Remarks in a Discussion on
Alternative Fuel Sources in
Franklinton, North Carolina**

February 22, 2007

The President. Thank you. Please be seated. Thank you all very much. I like to tell people, part of my job is to be the educator in chief. And today we're at a really interesting facility in North Carolina to talk about what's possible, what dreamers are doing to enable us to achieve a very important national goal, and that is to become less dependent on oil from overseas, thereby ensuring that our national security interests are better intact and our economic security interests are better intact and that we're better stewards of the environment. That's what we're here to talk about.

But before I do, I do want to thank some people. First, Laura sends her regrets. I'm a lucky boy to have her—[laughter]—to have her as my wife. We've got a lot of friends here in Carolina, and she sends her best wishes to our Carolina friends. I told some folks yesterday, I'm not very objective when it comes to my wife, but I think the country is really lucky to have her as the First Lady.

We're here at Novozymes, which is a company that makes enzymes. We're going to talk to Thomas, who is the president and plant manager, about what they do here and why it's relevant. But before we get there, I do want to say something about Steen Riisgaard. He's the president and CEO—Steen. He flew over from Denmark. I can't thank you enough for coming. I appreciate you being here. It's interesting, isn't it, when you're able to sit in North Carolina and talk about a Danish company that is investing to not only help us become less dependent on oil but, equally importantly, is investing capital, which enables citizens from the United States to find good work.

I toured around the facility, and I asked people at the facility how long they had been working here. And a lot of people have been here 20-plus years. So for those people who are worried about free trade, I want you to remember that if this country were to wall ourselves off from the world, we would miss opportunities to find markets for our products, and at the same time, miss opportuni-

ties for citizens who work at a facility like this to find good work. It's in our interests that we have free and fair trade.

And so I thank you very much, Steen, for investing in the United States of America, and I appreciate the fact that you're sensitive to the needs of the workers here in the United States of America. And I see you're sitting next to your Ambassador. Mr. Ambassador, welcome. I'm glad you're here.

A person who understands the vast potential in the lands here in North Carolina to make us less dependent on oil is Richard Burr. He's the United States Senator. I'm proud he's joined us today, and thank you for coming, Senator. [Applause] There you go. Congressman G.K. Butterfield—thank you for being here, G.K. Appreciate you coming. He's the United States Congressman from the neighboring district, but he has enough interest in making sure that we succeed in alternative sources of energy that he's here. He's also on an important subcommittee in the House. I appreciate your interest; appreciate you joining us.

I want to thank the agricultural commissioner from the great State of North Carolina, Steven Troxler, who's joined us today. Steve, thank you for coming. There he is, right there. Good to see you. See, Steve needs to take an interest in this, like he is, because doesn't it make sense to be able to say to our farmers, "Grow what you can grow so we become less dependent on oil." I like the idea of a President being able to say, "Wow, the crop report is in; we're growing more corn than ever before, which means we're importing less oil from overseas." It's an exciting time to think about, that our farmers not only are going to grow what we need to eat, but it's going to grow what we need to run our automobiles.

And that's coming. That's what we're here to discuss today. I know it sounds like a pipe-dream to some—you know, there goes the optimistic President talking again. But you're going to hear from some experts here. I'm just a history major. [Laughter] And I'm with Ph.D.s. [Laughter] Let me remind you who the President is. [Laughter] Yes.

But the Ph.D.s are providing the brain power necessary to help plants like this develop technologies that will enable us to convert wood chips into fuels that are running automobiles. It's an interesting time, isn't it, when you're able to say, we're on the verge of some breakthroughs that will enable a pile of wood chips to become the raw materials for fuels that will run your car.

I appreciate the mayor, Jenny Edwards, here, mayor of Franklinton, for joining us. Where are you, Madam Mayor? Thanks for coming. Proud to see you again. And all the Novozymes employees, I appreciate you setting this deal up, and I appreciate you putting up with the hundreds who travel with me. *[Laughter]* And thank you for your warm hospitality. I really do.

Look, here's the—I just told you the goal. The goal is for the United States to be—to diversify away from old, old ways, and it's possible. And I do believe it is a proper use of your money, taxpayers' money, to spend to encourage research on interesting ideas. We spent about \$12 billion since I've been your President to try to stimulate technologies that will literally change the way we live. A lot of that money has gone into clean coal technologies. If you're worried about dependency on oil from overseas, then it seems to make sense to me that we ought to be able to have the technology so that we can better use the resources we have here at home.

I don't know if you know this, we've got about 250 years worth of coal in America. That's what they estimate. And it makes sense, therefore, to spend money at the Federal level to develop technologies so we can burn that coal in environmentally friendly ways. The idea is to have zero-emission coal-fired plants here in America, and it's possible, and we're making progress toward that goal.

I happen to believe that if you're concerned about the environment and want to deal with renewable sources of energy, that we need to pursue nuclear power. Those powerplants emit zero greenhouse gases. It doesn't require any hydrocarbons from overseas to run those plants. So we're beginning to license new plants. We're spending money on wind and solar energies. It makes sense to be able to—as the price of hydrocarbons

goes up, it makes sense that there be alternative sources of energy coming to the market as quickly as possible.

So we're making pretty good progress. But if you really want to reduce the amount of oil that you consume, you got to reduce the amount of gasoline you use. In other words, if you say, "We want to reduce our dependence on oil," what you really got to do is change gasoline usage in the United States. And there's a couple of exciting things that are taking place—one is new battery technologies. We're spending money at the Federal level—and by the way, there's a lot of private sector money going into alternative sources of energy. And someday, you're going to be able to get in your car, particularly if you're a big-city person, and drive 40 miles on a battery. It's coming. And by the way, the car doesn't have to look like a golf cart—*[laughter]*—it could be a pickup truck. *[Laughter]*

And that technology is around the corner. And if we're able to drive the first 40 miles, or, say, 20 miles on gasoline, [electricity] * there's a lot of big-city folks that will never have to use a drop of gasoline on a daily basis. They'll be driving via electricity. These are lithium ionic batteries, technology—so when you hear that term, you just got to know, there's a lot of folks and a lot of money aiming hard to get this to the market as quickly as possible. Why? Because we've set a goal for the United States to be less dependent on oil.

Secondly—and this is what we're here to talk about today—is ethanol. It says that the new developments in ethanol—in other words, fuel derived from corn—can be diversified. Here's the problem. Right now we're consuming about 7 billion gallons of ethanol a year made from corn. And it's a pretty standard process. People here at this facilities have developed the enzymes necessary to break the corn down in an efficient way so that we can use ethanol derived from corn. The problem is, we got a lot of hog growers around the United States—and a lot of them here in North Carolina—who are beginning to feel the pinch as a result of high corn prices. A lot of the cattle people around the

* White House correction.

United States—I have got a few of them in my home State of Texas—they're worried about high corn prices affecting their making a livelihood. In other words, the demand for corn, because of agricultural use and now energy use, is causing corn prices to go up. I bet you the agriculture commissioner is hearing from folks.

And so how do—the question then is, how do you achieve your goal of less dependence on oil without breaking your farmers—without breaking your hog raisers? Corn farmers happen to like it, but I'm talking about the—[*laughter*—people dependent on corn.

And here's how: You develop new technologies that will enable you to make ethanol from wood chips or stalk grass or agricultural waste. And that's what we're here to talk about. Is it possible, and if it is possible, how close are we to achieving the technological breakthroughs that I believe are possible so that our—so that we're changing our habits?

And these are exciting times; they really are. I've always said, "America needs to stay on the leading edge of technological change." It will mean we remain a really important economy in the world, but it will also mean that our folks will be able to find good, high-paying jobs.

In this case, being on the leading edge of technological change means that we'll also be able to deal simultaneously with economic insecurities that come when China demands more for oil, the world produces less, the price of oil goes up, and so does the price of gas at the pump here in North Carolina; national security concerns, where some people who've got oil don't like us, and therefore, may be willing to use their energy resources to try to cause America to take a different view of the world; and environmental concerns. And all these three concerns come together with technology as the solution.

And so, Thomas, tell people what you do. [*Laughter*]

Thomas Nagy. Well, that was a nice introduction, and thank you, Mr. President. You may know, and many of you here—first of all, I want to welcome you very, very deep from my heart, and from all my colleagues here in Franklinton, welcome to North Carolina, welcome to Novozymes, and also, welcome to the guests here.

The President. Well, thank you. Like, you're the president, right?

Mr. Nagy. Well, you're the President. I'm—[*laughter*—well, okay, no any-ways—

The President. It didn't take him long to learn, you know. [*Laughter*]

Mr. Nagy. Novozymes is the world's leading biotechnology company within the field of industrial enzymes and microorganisms. We market more than 600 products around the globe, and all of these products have the same in common, that they—sort of like it's good for the environment. It's good for businesses because when using our products, you use less resources, less energy, less water, and hence, you make better use—

The President. So you make enzymes.

Mr. Nagy. We make enzymes. And enzymes is sort of like the key component you need to have when you convert starch or the corn to sugar that you can then make to alcohol or the ethanol.

The President. Right.

Mr. Nagy. But also, it's got to be the key component when you want to make your switch grass or your biomass to sugar and then to ethanol.

The President. So the enzyme begins to break down the raw materials in a particular raw material that will enable us to make more ethanol.

Mr. Nagy. That is correct.

The President. Is that what you're saying?

Mr. Nagy. Yes.

The President. Now—so is this a—is this like a huge distillery? [*Laughter*]

Mr. Nagy. Our plant here?

The President. Yes.

Mr. Nagy. Well, you could say what we do here—we use microorganisms, and the way we make these enzymes is by the use of these microorganisms. And you could compare our process to if you brew beer or wine. We take some agriculture raw materials like starch, again, or corn, and then we ferment the enzymes, basically, like you would ferment wine. Then the product here is the enzymes that we can then ship off to ethanol plants around in the U.S. And they use it today to break down the starch in corn and make ethanol. So we are a key provider of

a key technology to make this happen for you.

The President. Absolutely. And I presume that one of the bottlenecks to achieving widespread ethanol production is the cost of enzymes. Have you seen any appreciable decline in the cost of enzymes since you have been producing it?

[At this point, Mr. Nagy, president, Novozymes North America, Inc., made further remarks.]

The President. Yes. I want to repeat this, because you actually—he’s talking about your money. [Laughter] And he said that we gave a grant—we, the taxpayers of the United States, gave a grant to the researchers of this company. See, if they could not reduce the cost of producing the enzymes that would be critical to making ethanol, and this company was able to do so—reduced the cost by a factor of 30, which, I think, is a justifiable use of taxpayers’ money, to see those kinds of results.

Mr. Nagy. Thank you.

The President. Yes. You got a lot of Ph.D.s and advanced degrees here?

Mr. Nagy. Yes, we do. [Laughter] We have a few, yes.

The President. You do?

Mr. Nagy. Yes, we do.

The President. The reason I mention that is that part of remaining a competitive society is to make sure our children get a good education early, so that it is possible to get advanced degrees or high—at least a degree beyond high school. If you want a good job in America, you better go on after high school. I mean, the jobs in places like this are jobs that require brain power, as much as anything else. And therefore, the educational system of this State, for example, has been critical in attracting industries such as the company we’re talking about here. I mean, I go walking through the halls and shaking hands with people—we got people on—doing sophisticated computer programming; we got lab technicians who have got advanced degrees in bioengineering. And my only point is, it reminds me of how important higher education is for this country. And I applaud the folks of North Carolina about being on the leading edge of education, and

that’s why you got companies like here—like this company here paying pretty good money for jobs, I guess.

[Mr. Nagy made further remarks.]

The President. Good. Well, Thomas, thanks, buddy.

Mr. Nagy. You’re welcome.

The President. I appreciate it. You handled it well. [Laughter]

Kevin Wenger.

Kevin Wenger. Yes.

The President. Yes, Kevin, how are you? What do you do?

Mr. Wenger. I’m great. I’m the manager of the R&D group that we have here in North Carolina for ethanol research.

The President. For this company.

Mr. Wenger. For this company, yes, yes. We, about 5 years ago, decided to invest in a dedicated R&D group for ethanol process development, and we decided to anchor that research group here in North Carolina, because the U.S. is really where the ethanol market has been very strong.

The President. And you’ve got a degree in what?

Mr. Wenger. I have a degree in chemical engineering, Ph.D. from Colorado State University.

The President. Good.

Mr. Wenger. And I’ve been here in Novozymes since I finished graduate school in 1994.

The President. And so in 1994, were you thinking switch grass into—[laughter].

Mr. Wenger. I’ve always been interested in alternative energy and making ethanol. There wasn’t so many jobs related to switch grass in 1994. [Laughter]

The President. Well, cellulosic.

Mr. Wenger. Yes. But I was always—I’ve always been interested in fermentation also, and so Novozymes is a fermentation company, and that’s how I ended up here.

The President. Yes. Interesting.

Mr. Wenger. Yes.

The President. And so I’d like to quote what he said. Kevin said, “It’s going to be a challenge,”—talking about achieving what we’re talking about here—“but if we look at how far we have come in the past 5 years,

we have so much momentum, it shouldn't be that tough."

And the reason I quote a person who knows what he's talking about when it comes to developments necessary to bring the cellulosic ethanol to market, I quote it because I presume in that optimism, there's realism.

[Mr. Wenger, senior manager, Biofuels Research and Development, Novozymes North America, Inc., made further remarks.]

The President. What he referred to is something I should have talked about earlier, and that is, I set a goal of the United States reducing our gasoline consumption by 20 percent over the next 10 years. That's the 20–10 goal. In other words, it is a goal. And I mandated a fuel standard that says, we'll be using 35 million gallons of ethanol or alternative fuel over the next 10 years.

Now, the reason I did that is because I think it's possible to do it. And the reason I think it's possible to do it is because of people like Kevin telling me it's possible. Remember, I'm the history major. [Laughter] And so the advances you've seen in 5 years—if you're able to take yourself back 5 years ago to today, it is a noticeable difference, a—obviously reduced the cost of enzyme, for example, which is an important development.

Mr. Wenger. Yes, absolutely, it's a very noticeable difference, and in terms of the number of industry players that are really interested in this technology and are also willing to invest in making this technology happen, including Novozymes as an industry player, it's really amazing what we've seen over the last 5 years.

The President. Yes, great.

Mr. Wenger. Yes.

The President. The high price of energy has caused private capital to say that it's going to be impossible for a society like the United States to sustain its use on gasoline. So whether it be Novozymes who is investing or private sector funds, that money is coming in. See, they're fueling new research and development. So we've got the Government helping, but also, you've just got to know that the private sector is very much involved with trying to invent the technologies necessary to take advantage of a society that recognizes it has to diversify away from energy.

And I repeat to you, we're all connected, and so when a Chinese economy grows and their demand for oil goes up, it affects the price that you pay for gasoline. People got to know that. And therefore, it's important for us to continue to advance these kinds of research projects.

I met Dr. Mike in Greeley, Colorado, a year ago.

Michael Pacheco. Golden, Colorado, Mr. President.

The President. Golden—exactly, Golden, Colorado. [Laughter] How quickly they forget, anyway—[laughter]. I am 60. [Laughter] Golden, Colorado. Michael, tell them who you work for.

[Mr. Pacheco, Director, National Bioenergy Center, National Renewable Energy Laboratory, made further remarks, concluding as follows.]

Mr. Pacheco. Two years ago, we issued a study with USDA, put two agencies together, that showed that the U.S. could produce enough raw biomass that's equivalent to about 60 percent of all the oil that we use in the United States. The problem is, is most of that biomass is not an easy material to convert. It's not like corn grain. And so our research at NREL—

The President. Explain to people what you're talking about, like—

Mr. Pacheco. Things like forest residues, things like fast-growing trees and switch grass—the major constituent in that material is a cellulose fiber—usually accounts for more than half of the—

The President. Do you know what switch grass is? Tell them what switch grass is.

Mr. Pacheco. Switch grass is a native grass that grew in the Midwest. It's a grass that grows in relatively poor conditions; it can survive droughts very well.

The President. Rocky soil and dry. Sounds kind of like parts of Texas, doesn't it? [Laughter] Imagine, however, if you're able to grow a grass, where it's rocky soil and dry, that you're able to convert into energy. You're talking about a major change in the lifestyle of your children and my children and their kids. I mean, this is—anyway, go ahead.

Mr. Pacheco. That's a—[laughter]—you're doing very well. [Laughter] That's a big part—

The President. I am passionate on the subject. [Laughter]

[Mr. Pacheco, made further remarks.]

The President. You know, it's interesting, you're probably wondering whether or not automobiles can be easily converted to use ethanol, and the answer is, absolutely. There's a lot of automobiles in the Midwest that are filling up with 85-percent ethanol, called E-85 pumps. It doesn't take much. So one of the barriers to the advent of a lot of ethanol use is not the automobile. It's easy to convert them. As a matter of fact, some of you out there probably have got a car that can use ethanol, and you just don't know it—flex-fuel automobiles, they're called.

Secondly, the production process—once we figure out what needs to take place internally—is not that expensive, relative to huge gasoline refineries. What will happen is, when you get a wood chip breakthrough, for example, where it becomes cost effective, you're going to have ethanol production plants all across North Carolina, where the wood chips can be gathered.

One of the reasons we keep talking about costs, it's just real practical. Somebody is not going to fill up their car with ethanol if it costs a lot more than gasoline. The consumer is pretty wise, and they care about the environment—no question about it. But if a person is having to drive back and forth to work, they're going to generally pick the most economically competitive fuel to do that. People want to keep money in their pocket, and therefore, if it costs less using gasoline, they'll use it. So therefore, that's why we're driving these research dollars, to get the cost of producing ethanol down so it can compete. And it's going to happen, because as that price of oil goes up, the price of gasoline goes up, which makes ethanol more competitive. And one reason—just so you know—one reason why there's been such a push is because when the price of oil went up from early 2001 to where it is today, about \$60 a barrel, people saying, "We may not be able to sustain this; we better get moving." And that's what's happening.

North Carolina State—Ratna, welcome. Thank you. You're a doctor of?

Ratna Sharma. Biological engineering.

The President. Biological engineering. Chemical engineering. Biological engineering. [Laughter] People should be getting the picture that we've got a lot of smart people working on this project. When you've got Ph.D.s surrounding the President talking about doing what's right, we've got a lot of brain power working on it. And that's where you're going to get your breakthroughs.

Anyway, so what are you working on?

[Ms. Sharma, assistant professor, Department of Biological and Agricultural Engineering, North Carolina State University, made brief remarks.]

The President. So what do you think? I mean, how long have you been doing this for?

Ms. Sharma. I've been doing this for about 4 years.

The President. Really? So when you got your Ph.D., you never dreamt you'd be thinking about converting wood to oil or fuel. What did you feel?

Ms. Sharma. Well, I was trained as an agricultural engineer, and I grew up on—in our ag university campus with farms around me.

The President. Oh, I see.

Ms. Sharma. So I always saw residues lying around and plants and stuff. And I got my Ph.D. in food safety engineering, where I learned about microorganisms. So then I saw this opportunity—it was like putting together engineering and microbiology, to process something and get value from something that's typically not—

The President. And there are other people at North Carolina State working with you on this project?

Ms. Sharma. Yes, there are. There are people working on utilizing forest residues, wood chips for converting to ethanol. There are people working on different ag residues—sweet potatoes, which is a starch base, feedstock, people working on biodiesel, from—again, from agricultural resources.

So there are a lot of people working on overcoming the challenges of pretreatment and converting the carbohydrates into sugars

and then eventually fermenting it into ethanol. And my focus has been more on ag residues like cotton stalks, hays, and straws, which would typically not be useful.

The President. Cotton stalks, pretty interesting, isn't it?

Ms. Sharma. They are.

The President. They now get plowed up into the ground. Your idea is to get them so they can end up in somebody's automobile, not in the ground.

Ms. Sharma. Exactly, because there is a lot of potential. And like switch grass, which grows in marginal lands—and we have, like you mentioned, a big swine industry here in North Carolina. So the advantage is, we could possibly put the two together, use animal waste as a nutrient source to grow the switch grass and then convert it into ethanol, so you're getting energy from waste.

The President. So are people pretty upbeat about it? People feel pretty upbeat?

Ms. Sharma. Well, people who are aware and looking forward to switching from fossil fuels to renewable energy, yes, they are.

The President. Feeling, pretty good.

Ms. Sharma. And they feel it's achievable. We can do it. We just need to work a little harder on that.

The President. Yes. A little more money and a little harder. [Laughter] Talk to my man, Michael. He's the guy distributing some of the money. [Laughter] Well, good. Thanks, doc. Thanks for joining us.

Ms. Sharma. Thanks, Mr. President.

The President. I'm sure proud you're here. NC State is a fine, fine institution. I know you're proud to work there.

Ms. Sharma. Yes, I am, definitely.

The President. Ryan, where are you from?

Ryan Adolphson. I'm from the University of Georgia in Athens, Georgia.

The President. It's a bold man to come here to North Carolina. [Laughter] A great school, by the way. What do you do?

Mr. Adolphson. I'm with the university's—I'm in charge of our bio—our pilot facilities that are looking into early transitioning some of this technology from the bench out to industry, looking at really the wide or broad spectrum of this concept of biomass to energy that includes fuels and

includes electrical and different bioproducts, and really running the gamut of this whole type of industry. And we have a pretty large research facility looking into this at all levels.

The President. In Athens?

Mr. Adolphson. In Athens, yes—bio-refining and carbon cycling center that we've recently started in the last 2 years.

The President. What is a bio—I mean, what is a carbon recycling center?

Mr. Adolphson. Carbon cycling.

The President. Carbon cycling.

Mr. Adolphson. Right. So we're looking into the concept of a biorefinery, which Mike mentioned, and really taking a little bit bigger picture view, stepping back, not looking only at ethanol but counting ethanol as a significant piece to the puzzle, but looking at all the other products that can be generated from biomass. You know, similar to a petroleum refinery that takes a barrel of crude and doesn't just make diesel and gasoline but 50, 60 other products out of that.

So we're looking at our wood chips as that barrel of crude, taking that, and turning it into a larger profit stream than just a single product. And we believe that's going to drive the economics—

The President. Like what other products?

Mr. Adolphson. Well, there's a whole host of products. You know, the char, the stuff that's in a thermochemical process, instead of a biological process, or the sugar platform. The Department of Energy really breaks up when they talk about our production of ethanol in two pathways: One is thermochemical, and the other is our fermentation—or our sugar platform that we've kind of been talking about now.

The thermochemical platform allows us to take all these different biomass streams, treat them with heat in a certain way, release all of the energy from those, and we can capture that, turn that into our product.

So one product we have left is the carbon that's left over, and we're able to look at that as a soil amendment and take that carbon, without releasing it into the atmosphere, and put it back into the ground. And then we have everything that comes out of that biomass that we can turn into ethanol and we can turn into specialty chemicals for our chemical industry as precursors to things like

nutriceuticals, pharmaceuticals. And then we have the gas that comes off that could be, maybe, cleaned up and used as a pipeline-quality gas, like natural gas, to heat homes.

The President. All from one big pile of wood chips?

Mr. Adolphson. All from one big pile of wood chips, right. You know, we're at a very unique place—

The President. You've got to dream big in order to be able to get it done. [Laughter] That's good.

Mr. Adolphson. We are at a unique place right now, and the technology is there.

The President. Pretty interesting, isn't it? It's—I'm not so sure if they'd believe me in the coffee shop in Crawford if I told them what he just told me. [Laughter] But it's possible.

Mr. Adolphson. It is, right. I like to say, we're not there yet, but we can see it from here.

The President. You can, yes.

Mr. Adolphson. We've got two—on the ground in the next 18 months in Georgia, we've got a biorefinery taking wood chips to ethanol; we've got a traditional corn ethanol plant going in; we've got two, what we call integrated biorefineries that are going to be pulling mostly—we have 24 million acres of commercial forest in Georgia. So that's a big priority for us. And the pulp and paper industry has been going other places.

The President. Are they investing?

Mr. Adolphson. The industry itself?

The President. Yes.

[Mr. Adolphson, director, Georgia Industrial Technology Partnership and the University of Georgia Biomass Processing Facilities, made further remarks.]

The President. Yes, yes. Absolutely, yes. That's pretty interesting, isn't it? Thanks for coming. I'm glad you came over.

Mr. Adolphson. Thank you, Mr. President. We're excited to be here. Great opportunity.

The President. And then we're going to end up with Terry. Terry Ruse.

Terry Ruse. All of the Ph.D.s around the table—I don't have one of those, but I—

The President. I'm glad to join you. [Laughter]

Mr. Ruse. I'm happy to report to you that the ethanol industry is alive and well and up and taking nourishment.

The President. And so what do you do?

Mr. Ruse. I am the chief operating officer for Agri-Ethanol. That's a privately held ethanol company in Raleigh.

The President. And what do you—so what—

Mr. Ruse. We are developing—our strategic plan is to develop 10, 108-million-gallon-a-year ethanol plants in the South—

The President. So you're going to be the manufacturer?

Mr. Ruse. We are going to be the manufacturer.

The President. Right.

Mr. Ruse. Thanks to the vision of Dave Brady and the guys that own Agri-Ethanol, I've been able to develop a really flexible project in that we have a design to start out as a corn plant to process corn. We were building 11,000 foot of track—big loop track to be able to bring corn in by rail and take ethanol back out.

In the center of that loop track, we've engineered the ability to handle wood chips.

The President. Interesting.

Mr. Ruse. But we've got all that in place. We have a CO₂ company that will process the CO₂, anything—any of the CO₂ that doesn't go to that direction to make food-grade liquid carbon dioxide will be directed into hydroponic gardening or into growing algae to support an adjacent biodiesel plant, that we have the real estate to put one of those on.

The President. So you intend to buy the enzymes from this company to run in your plant—

Mr. Ruse. We have this—as a matter of fact, we have offered them the opportunity to establish a field research laboratory on our site so that they don't have to go long distances to get their people and do really groundwork at our facility.

The President. And where is this thing?

Mr. Ruse. It's in Aurora, North Carolina. It's the first one. It's about 160 miles east of Raleigh.

The President. And when will you—are you building it now?

[Mr. Ruse made further remarks.]

The President. You see, you can't build a plant far away from the raw material. That's the interesting thing about this industry. What he's basically saying is, is that investors think you have to be in the middle of a corn field, really. And that's why there's a lot of plants being built in the Midwest, because there's a lot of corn in the Midwest.

Mr. Ruse. But because of the fact we're closer to the population density centers for the ethanol and the animals that we have in North Carolina, we can prove that our plant is as competitive as the plant in Iowa.

The President. You can't have a centralized plant and ship your ethanol long distances, either. The production needs to be close to the raw material and the users, is what you're saying. It's the economics.

Mr. Ruse. That's exactly correct. And this—each one of these plants will produce about 400,000 tons a year of highly digestible, high protein feed to help the hog farmers, that you alluded to, get over their heart pain of—

The President. High corn.

Mr. Ruse. —of high corn. And coming from the farm, the thing that I understand most is the resiliency of the American farmer.

The President. You bet.

Mr. Ruse. You give him a good price for the corn, and he will grow the corn. And I think that when the March planning report comes out, you'll see closer to—

The President. A lot of corn.

Mr. Ruse. —13 billion or 13½ billion bushel corn market and 90 million acres planted than what we've seen in the past.

The President. That's right.

Mr. Ruse. And so all of the price concerns from the animal growers and from the Wall Streeters will be evaporated.

The President. Will be eased somewhat. That's right. He's right. It's amazing how the market responds.

Mr. Ruse. And the one last piece of our project is that we intend to build a "green" truckstop on each one of these sites that sells biodiesel, sell E-10 and E-85.

The President. That would be good. E-10 is ethanol—10-percent ethanol.

Mr. Ruse. Ten-percent ethanol and 85-percent ethanol and then biodiesel.

The President. Yes. Well, the purpose was to give everybody a sense of where a lot of

smart people and good capital are moving. And smart people are here working on some amazing technologies that—you know, that I believe 10 years from now, people will say, "Gosh, it's interesting that they were worried about this particular technology coming to fruition," because it's coming to fruition. And the role of the Government is to stimulate thought and investment and set goals. And we've set a big goal, really have—reduction of gasoline by 20 percent over the next 10 years.

I wouldn't have done that if I didn't think it was achievable. Part of it is to change our CAFE standards on automobiles, which will encourage conservation. The other part is to change the fuel mix across America.

And this is a coming time. It really is. And I want to thank those of you who are on the frontline of changing it. It must be exciting for you to be able to work on something so novel and so encouraging and so important for our country.

I thank the good folks at this important company for letting me come by to say hello. I ask for God's blessings on the United States of America. Thank you.

NOTE: The President spoke at 12:10 p.m. at Novozymes North America, Inc. In his remarks, he referred to Steen Riisgaard, president and chief executive officer, Novozymes; and Denmark's Ambassador to the U.S. Friis Arne Petersen. A participant referred to David L. Brady, chairman and chief executive officer, Agri-Ethanol Products, LLC.

Remarks Following a Meeting With Transportation Fuel Experts and Researchers

February 23, 2007

Listen, I just had a fascinating discussion. First, I'm dealing with some entrepreneurs, people who believe that there is a market developing for automobiles that will use high technology batteries to—for people to be able to motor back and forth from work.

I also met with some of our scientists who are working on new battery technology. I also met with people that are working to help us develop a fuel industry that will be able to